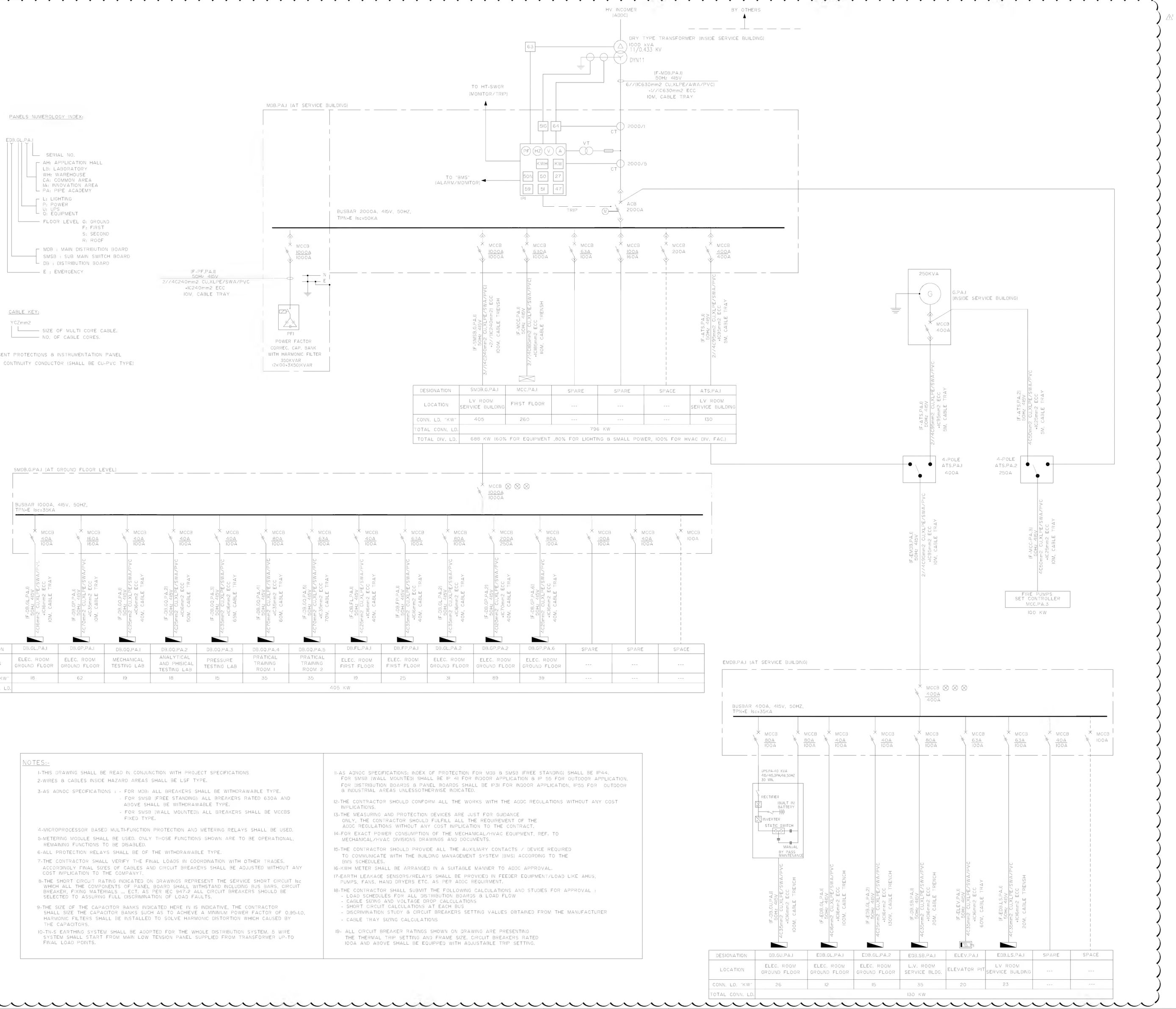
REFERENCE DRAWINGS	DWG NO.
LEGEND AND GENERAL NOTES	E-06-001
PANEL SCHEDULES (SHEET 1 OF 2)	E-06-902
PANEL SCHEDULES (SHEET 2 OF 2)	E-06-903

LEGEND:

SYMBOLS	DESCRIPTION
27	UNDER VOLTAGE PROTECTION
47	PHASE SEQUENCE PROTECTION
50	INSTANTANEOUS OVER CURRENT PROTECTION
50N	TIME OVER CURRENT PROTECTION
51	EARTH FAULT PROTECTION
51G	RESTRICTED EARTH FAULT RELAY
59	OVER VOLTAGE PROTECTION
63	TEMPRATURE TRIP RELAY (BUILT INTO TRANSFORMER) WIRED TO IPI
64	THREE PHASE LOAD BALANCE RELAY
PF	POWER FACTR METER
HZ	FREQUENCY METER
A	AMMETER
V	VOLTMETER
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	TRANSFORMER 11/0.433KV DYN 11 (RATING AS ON DRAWINGS)
MDB	MAIN DISTRIBUTION BOARD
SMSB	SUB MAIN SWITCH BOARD
	FINAL DISTRIBUTION BOARD
	MOTOR CONTROL CENTER IP54 OR AS SPECIFIED
ACB	4 POLE WITHDRAWAL TYPE AIR CIRCUIT BREAKER (MOTORIZED TYPE) WITH SHUNT TRIP.
MCCB	3 POLE WITHDRAWAL TYPE MOLDED CASE CIRCUIT BREAKER
MCCB	3 POLE FIXED TYPE MOLDED CASE CIRCUIT BREAKER



DESIGNATION	SMDB.G.PA.1	MCC.PA.1	SPARE	SPARE	SPACE	ATS.PA.1
LOCATION	LV ROOM SERVICE BUILDING	FIRST FLOOR	---	---	---	LV ROOM SERVICE BUILDING
CONN. LD. "KW"	405	260	---	---	---	130
TOTAL CONN. LD.	796 KW					
TOTAL DIV. LD.	688 KW (60% FOR EQUIPMENT ,80% FOR LIGHTING & SMALL POWER, 100% FOR HVAC DIV. FAC.)					

DESIGNATION	DB.GL.PA.1	DB.GP.PA.1	DB.GQ.PA.1	DB.GQ.PA.2	DB.GQ.PA.3	DB.GQ.PA.4	DB.GQ.PA.5	DB.FL.PA.1	DB.FP.PA.1	DB.GL.PA.2	DB.GP.PA.2	DB.GP.PA.6	SPARE	SPARE	SPACE
LOCATION	ELEC. ROOM GROUND FLOOR	ELEC. ROOM GROUND FLOOR	MECHANICAL TESTING LAB	ANALYTICAL AND PHISICAL TESTING LAB	PRESSURE TESTING LAB	PRATICAL TRAINING ROOM 1	PRATICAL TRAINING ROOM 2	ELEC. ROOM FIRST FLOOR	ELEC. ROOM FIRST FLOOR	ELEC. ROOM GROUND FLOOR	ELEC. ROOM GROUND FLOOR	ELEC. ROOM GROUND FLOOR	---	---	---
CONN. LD. "KW"	18	62	19	18	15	35	35	19	25	31	89	39	---	---	---
TOTAL CONN. LD.	405 KW														

DESIGNATION	DB.GU.PA.1	EDB.GL.PA.1	EDB.GL.PA.2	EDB.SB.PA.1	ELEV.PA.1	EDB.LS.PA.1	SPARE	SPACE
LOCATION	ELEC. ROOM GROUND FLOOR	ELEC. ROOM GROUND FLOOR	ELEC. ROOM GROUND FLOOR	L.V. ROOM SERVICE BLDG.	ELEVATOR PIT	L.V. ROOM SERVICE BUILDING	---	---
CONN. LD. "KW"	26	12	15	35	20	23	---	---
TOTAL CONN. LD.	130 KW							

NOTES:-

1-THIS DRAWING SHALL BE READ IN CONJUNCTION WITH PROJECT SPECIFICATIONS

2-WIRES & CABLES INSIDE HAZARD AREAS SHALL BE LSF TYPE.

3-AS ADNOC SPECIFICATIONS : - FOR MDB: ALL BREAKERS SHALL BE WITHDRAWABLE TYPE.
- FOR SMSB (FREE STANDING): ALL BREAKERS RATED 630A AND ABOVE SHALL BE WITHDRAWABLE TYPE.
- FOR SMSB (WALL MOUNTED): ALL BREAKERS SHALL BE MCCBS FIXED TYPE.

4-MICROPROCESSOR BASED MULTI-FUNCTION PROTECTION AND METERING RELAYS SHALL BE USED.

5-METERING MODULE SHALL BE USED. ONLY THOSE FUNCTIONS SHOWN ARE TO BE OPERATIONAL, REMAINING FUNCTIONS TO BE DISABLED.

6-ALL PROTECTION RELAYS SHALL BE OF THE WITHDRAWABLE TYPE.

7-THE CONTRACTOR SHALL VERIFY THE FINAL LOADS IN COORDINATION WITH OTHER TRADES. ACCORDINGLY FINAL SIZES OF CABLES AND CIRCUIT BREAKERS SHALL BE ADJUSTED WITHOUT ANY COST IMPLICATION TO THE COMPANY.

8-THE SHORT CIRCUIT RATING INDICATED ON DRAWINGS REPRESENT THE SERVICE SHORT CIRCUIT Isc WHICH ALL THE COMPONENTS OF PANEL BOARD SHALL WITHSTAND INCLUDING BUS BARS, CIRCUIT BREAKER, FIXING MATERIALS ... ECT. AS PER IEC 947-2 ALL CIRCUIT BREAKERS SHOULD BE SELECTED TO ASSURING FULL DISCRIMINATION OF LOAD FAULTS.

9-THE SIZE OF THE CAPACITOR BANKS INDICATED HERE IN IS INDICATIVE, THE CONTRACTOR SHALL SIZE THE CAPACITOR BANKS SUCH AS TO ACHIEVE A MINIMUM POWER FACTOR OF 0.95-LO. HARMONIC FILTERS SHALL BE INSTALLED TO SOLVE HARMONIC DISTORTION WHICH CAUSED BY THE CAPACITORS.

10-TN-S EARTHING SYSTEM SHALL BE ADOPTED FOR THE WHOLE DISTRIBUTION SYSTEM. 5 WIRE SYSTEM SHALL START FROM MAIN LOW TENSION PANEL SUPPLIED FROM TRANSFORMER UP-TO FINAL LOAD POINTS.

11-AS ADNOC SPECIFICATIONS: INDEX OF PROTECTION FOR MDB & SMSB (FREE STANDING) SHALL BE IP44. FOR SMSB (WALL MOUNTED) SHALL BE IP 41 FOR INDOOR APPLICATION & IP 55 FOR OUTDOOR APPLICATION. FOR DISTRIBUTION BOARDS & PANEL BOARDS SHALL BE IP31 FOR INDOOR APPLICATION, IP55 FOR OUTDOOR & INDUSTRIAL AREAS UNLESSOTHERWISE INDICATED.

12-THE CONTRACTOR SHOULD CONFORM ALL THE WORKS WITH THE ADDC REGULATIONS WITHOUT ANY COST IMPLICATIONS.

13-THE MEASURING AND PROTECTION DEVICES ARE JUST FOR GUIDANCE ONLY, THE CONTRACTOR SHOULD FULFILL ALL THE REQUIREMENT OF THE ADDC REGULATIONS WITHOUT ANY COST IMPLICATION TO THE CONTRACT.

14-FOR EXACT POWER CONSUMPTION OF THE MECHANICAL/HVAC EQUIPMENT, REF. TO MECHANICAL/HVAC DIVISIONS DRAWINGS AND DOCUMENTS.

15-THE CONTRACTOR SHOULD PROVIDE ALL THE AUXILIARY CONTACTS / DEVICE REQUIRED TO COMMUNICATE WITH THE BUILDING MANAGEMENT SYSTEM (BMS) ACCORDING TO THE BMS SCHEDULES.

16-KWH METER SHALL BE ARRANGED IN A SUITABLE MANNER TO ADDC APPROVAL.

17-EARTH LEAKAGE SENSORS/RELAYS SHALL BE PROVIDED IN FEEDER EQUIPMENT/LOAD LIKE AHUS, PUMPS, FANS, HAND DRYERS ETC. AS PER ADDC REQUIRMENT.

18-THE CONTRACTOR SHALL SUBMIT THE FOLLOWING CALCULATIONS AND STUDIES FOR APPROVAL :
- LOAD SCHEDULES FOR ALL DISTRIBUTION BOARDS & LOAD FLOW
- CABLE SIZING AND VOLTAGE DROP CALCULATIONS
- SHORT CIRCUIT CALCULATIONS AT EACH BUS
- DISCRIMINATION STUDY & CIRCUIT BREAKERS SETTING VALUES OBTAINED FROM THE MANUFACTURER
- CABLE TRAY SIZING CALCULATIONS

19- ALL CIRCUIT BREAKER RATINGS SHOWN ON DRAWING ARE PRESENTING THE THERMAL TRIP SETTING AND FRAME SIZE. CIRCUIT BREAKERS RATED 100A AND ABOVE SHALL BE EQUIPPED WITH ADJUSTABLE TRIP SETTING.

CLIENT :

أدنـــوك
ADNOC
شركة بترول أبوظبي الوطنية

G.F	M.F	K.S	M.N	M.N	ISSUED FOR ADDENDUM NO.1	26/10/08	1
G.F	M.F	K.S	M.N	M.N	ISSUED FOR TENDER	09/10/08	0
PROJ.TEAM			CHK	BY	REVISIONS	DATE	REV NO.
APPROVED			ENG				JOB NO.

PROJECT :

BOROUGE INNOVATION CENTER
IN ABU DHABI
AGREEMENT NO:II5984DI - PROJECT NO.5984

END USER :

بروج
Borouge

CONSULTANT :

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PIPE ACADEMY BUILDING

SINGLE LINE DIAGRAM

SCALE	JOB NO.	DWG NO.	REV NO.
NTS	1194	E-06-901	1

FILENAME

A1